

## ABSTRACT

Thermal barrier coating (TBC) and a method of depositing a TBC having a modulated columnar microstructure that exhibits increased impact resistance. The TBC is deposited to have a columnar microstructure in which columns extend from a substrate surface. The columns having inner regions contacting the surface, outer regions near an outermost surface of the TBC, and interior regions therebetween. The inner regions of the columns are substantially normal to the substrate surface and at least one of the interior and outer regions of the columns are nonaligned with its respective inner regions, so that the columns of the columnar microstructure are continuous but modulated between the inner and outer regions to reduce tensile stresses within the columns resulting from particle impact.